

Page 1 of 1

All amounts are calculated in domestic currency.

All Vendors	PO ID PO35149	Receipt Dates from 2/3/2017 to 2/3/2017
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Total Received Quantity:	232.8330
Total Qty to Inspect (PO U/M):	0.0000
Total Reject Quantity:	0.0000
Total Receipt Value:	\$0.00
Total Balance Due Quantity:	0.0000



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60624597

FROM: CRAN

PAGE 1

CUST NUMBER: 1203820 NET WGT: 70.039 REQ.DATE: 02/06/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 02/01/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO35149 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0001 36449 SMLS CD 304/L A269 1/2 OD X .035 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	60.000 FT	60.000 FT	60.000 FT	10.426

PCS
3

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO:49354071 HT:YX1602588 PC: 3 CUSTOMER QTY: 60.000 UOM FT
MLT:CHINA MFG:CHINA SLB/CL:10-40

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	100.000 FT	100.000 FT	100.000 FT	36.672

PCS
5

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO:49342471 HT:YX1501783 PC: 5 CUSTOMER QTY: 100.000 UOM FT
MLT:CHINA MFG:CHINA SLB/CL:11-63

0003 33047 CDS 4130 6736 3/4 X .049 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	40.000 FT	47.833 FT	47.833 FT	17.541

PCS
2

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
PO:49353474 HT:598618 PC: 2 CUSTOMER QTY: 47.833 UOM FT
MLT:GERMANY MFG:GERMANY SLB/CL:1625993

SP 17-02-6

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60624597

FROM: CRAN

PAGE 2

CUST NUMBER: 1203820
SOLD TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA

NET WGT:

70.039 REQ.DATE: 02/06/17 CONFIRMED
SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

SALESPERSON: DONNA SMALLEY
TERMS: NET 30 DAYS
F.O.B.: SHIPPING POINT
CUST ORD NO.: PO35149

SHIP BY: 02/01/17
VIA: COMMON CARRIER
FREIGHT: PREPAID
RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION

0004 43284 D6061-T6 1 OD X .065 WA ✓ WIDTH LENGTH
12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	24.000 FT ✓	24.000 FT ✓	5.400

PCS
2

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99

PO:49353002 HT:F002189270002 PC: 2 Export License: NLR

Expiration Date: 0/00/00

MLT:UNITED STATES MFG:UNITED STATES CUSTOMER QTY: 24.000 UOM FT

SLB/CL:220852

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
B	CARTON	1.000	73.000		24.5000	

BY: TB
RT 000-

1.000 73.000

UNLOAD TYPE: NONE SPECIFIED

SP1702-6

DATE SHIPPED

DATE FILLED

THANK YOU FOR THIS ORDER

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O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 60624597

FROM: CRAN

PAGE 3

CUST NUMBER: 1203820 NET WGT: 70.039 REQ.DATE: 02/06/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKSBURY ON HAWKSBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 02/01/17
TERMS: NET 30 DAYS 27 ENGLEHARD DRIVE
F.O.B.: SHIPPING POINT MONROE TWP NJ 08831
CUST ORD NO.: PO35149
VIA: COMMON CARRIER
FREIGHT: PREPAID
RELEASE NO.:
RECEIVING PHONE:

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk C. J. Lechner Date: 2/01/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

1
THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>

MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 2016-12-80					
Contract No.: TWM P.O.No.: M49354071				Date of Issue.: 2016.12.17					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions				Quantity		
TP304/TP304L	YX1602-588	10-40	1/2"x0.035"x20'				Pieces	Feet	
							500	10,000	
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.018	1.20	0.034	0.002	0.32	18.15	8.05	-	-
Product Analysis	0.015	1.08	0.036	0.003	0.33	18.52	8.43	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	61/62		99,000/100,000			44,000/45,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA



By:



James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China

DAS
48
9-89
17/02/08

MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-1-13					
Contract No.: TWM P.O.No.: M49342471				Date of Issue.: 2016.1.5					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions				Quantity		
							Pieces	Feet	
TP304/TP304L	YX1501-783	11-63	3/4" x 0.049" x 20'				250	5,000	
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.012	0.68	0.031	0.001	0.37	18.35	8.05	-	-
Product Analysis	0.019	0.70	0.033	0.002	0.39	18.37	8.31	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	65/66		89,000/90,000			34,000/35,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	75/77	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 219S-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

DAS
14
9-89



By:

James Shi

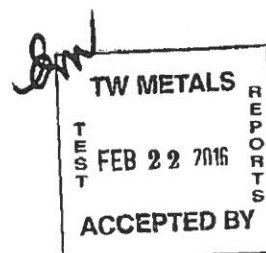
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China



Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH · Postfach 1340 · 33043 Paderborn · Deutschland

TW Metals

The Aboretum, Suite 204
760 Constitution Drive
EXTON PA 19341
USA

Dokument-Nr.: 41-961797/001/P
Document No.: 41-961797/001/P

No. du document: 41-961797/001/P

Kunden-Bestell-Nr.: 46004384 TW M49353474

Purchase Order No.: 46004384 TW M49353474

No. de commande du client: 46004384 TW M49353474

Benteler Auftrags-Nr.: 1625993

Benteler Order No.: 1625993

No. de commande Benteler: 1625993

Versandanzeigen-Nr.: 4170922

Dispatch Note No.: 4170922

No. d'avis d'expédition: 4170922

Produkt: NAHTLOSE STAHLROHRE

Product: SEAMLESS STEEL TUBES

Produit: TUBES D'ACIER SANS SOUDURE

Lieferbedingungen:

AMS-T-6736B Type 1, ASTM-A 519-2006/MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen:

AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Dimensions-tolerances:

Dimensions-tolerances:

Stahlsorte:

GRADE 4130

Steel grade:

Nuance d'acier:

Lieferzustand:

Condition N

Delivery condition:

État de livraison:

Produktkennzeichnung:

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.

Product marking:

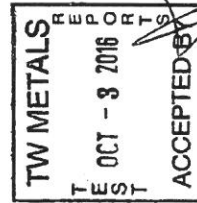
CD AQ S DIMENSIONS WA GERMANY

Marquage du produit:

AEZ = Ätzenbeschriftung, Etching ink marking, Gravure à l'encre · FK = Farbkennzeichnung, color marking, marquage par couleur · FS = Farbschablonierung, paint stencilling, marquage par peinture · FSD = Farbstrahlrucker, Color jet printer, imprimante à jet d'encre de couleur · LK = Laserkennzeichnung, Laser marking, Marquage laser · PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette · PS = Prägestempel, die stamp, marquage par poinçonnage · TS = Tintenstrahlkennzeichnung, Ink jet spray marking, imprimante à jet d'encre

DAS

14.7/102/09
9-89



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ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-961797/001/P
Document No.:
No. du document:
Prüf-Nr.:
Inspection No.:
No. du certificat:
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Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
			feet	lbs				
0003	154	0.750" O.D. * 0.049" WT 20 FT - 24 FT	3688,32	1345	598618			

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	598618	0,310	0,260	0,54	0,010	0,001	0,88	0,17	0,14	0,17

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	598618	0,310	0,280	0,52	0,009	0,001	0,89	0,17	0,12	0,15

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:
The tubes are non destructive tested:
Les tubes ont passé un essai non destructif:

ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for Imperfections;
ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections;
Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

PASSED

Augensichtkontrolle:	PASSED	Materialverwechslungsprüfung:	PASSED	Maßkontrolle:	PASSED
Visual inspection:		Material conformity test:		Dimensions examination:	
Examen visuel:		Vérification de la nuance:		Vérification des dimensions:	

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

DAS
14/7/02/09
9-89

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
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Dokument-Nr.: 41-961797/001/P

Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Zugversuchslängs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen			mm	Rp 0,2 %	Rm	A2"
Requirements				KSI	KSI	%
Exigences				MIN 75	MIN 95	MIN 12.00
0003	000001	598618	19,05 X	1,25	120	128
0003	000002	598618	19,05 X	1,25	120	128
0003	000003	598618	19,05 X	1,25	118	127
0003	000004	598618	19,05 X	1,25	120	128
0003	000005	598618	19,05 X	1,25	118	128

Randentkühlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0003

acc. to AMS-6360, partial decarburization outside max. 0.009 in, partial decarburization inside max. 0.009 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.305 mm, without total decarburization; partial decarb. out. max.: 0,229 mm; partial decarb. ins. max.: 0,229 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0003

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1

Pos. / Item / Poste: 0003

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0003

Magnetic particle inspection: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0003

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure microscopy, On prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

DAS
14 / 17/02/09
9-89

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

41-961797/001/P

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Inspection No.:
No. du certificat:

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Paderborn Schloß Neuhaus, 19.09.2016, TEL.: 05254.81-201765 FAX: 05254.81-201752

Abnahmebeauftragter
Inspection representative

Contrôleur

i.A. THOMAS GOLLAN / GUT

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH
Residenzstraße 1
33104 Paderborn
Germany
Tel.: 49.5254.81-0 Fax: 49.5254.13666

BENTELER
Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204.3.1 / appendix
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.
Document No.:
No. de document:

41-961797/001/P

Blatt: von
Page: 1 of 1
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301K)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)		
			J(5/16") min. 35 HRC	J(8/16") min. 28 HRC		max. S 2	max. R 1	max. C 2
598618 Decarburization Depth	003	min. 5			F max. 0,34			
		9 Outside 0,000 mm	42 Inside 0,000 mm	34	0,029	0,024	R 1	C 2

BENTELER
Steel/Tube GmbH

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

DAS
14
9.09
7/02/09

Abnahmebeauftragter
Inspection representative
Contrôleur

Paderborn Schloß Neuhaus, 21.09.2016
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Thomas Gollan

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49353002-1		CUSTOMER PART NUMBER: 43284		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 220852	LINE ITEM: 001	SHIP DATE: 07/15/2016	KAISER LOT NUMBER: F00218927	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 739.000 LB	QUANTITY: 274.000 PCS	B/L NUMBER: 222328	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00218927	0001	1	47.7	39.9	20.5	N/A	N/A	N/A
F00218927	0002	1	47.7	40.9	18.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D75918	.58	.31	.22	.06	.99	.10	.06	.03	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 1.0000"; Wall: 0.0650"; Round @
AMS 4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS-4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.

DAS
14
9-89

17/02/09

TW METALS	
TEST	REPORT
JUL 22 2016	
ACCEPTED BY	

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00022571
Kaiser Order Number: 220852
Line Item: 001

KAISER
ALUMINUM
FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRO.500W.035

PO / BATCH NO.: PO 35149 / B136760

DATE: 17/02/08

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .500 W.035

QUANTITY RECEIVED: 60

THICKNESS RECEIVED: .499 W.035

QUANTITY INSPECTED: 60

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y N	304
CORRECT THICKNESS	<input checked="" type="radio"/> Y N	.499 W.035
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y N	ASTM A213
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y N	Heat # PX1602-588
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y N	M304TRO.500W.035
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y N	M136760
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING		N	A		

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAG 48</u> DATE: <u>17/02/08</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRO.750W.049 PO / BATCH NO: 35749/134760
 DATE: 17/02/09

MATERIAL CERT REC'D: <u>yes</u>	THICKNESS ORDERED: <u>.049</u>
QUANTITY RECEIVED: <u>100'</u>	THICKNESS RECEIVED: <u>.045</u>
QUANTITY INSPECTED: <u>100'</u>	SHEET SIZE ORDERED: _____
QUANTITY REJECTED: _____	SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y	N	
CORROSION	Y	<input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y	N	<u>304</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y	N	<u>.045</u>
PHOTO REQUIRED	Y	<input checked="" type="radio"/> N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y	N	<u>ASTM A213</u> <u>ASTM A269</u>
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	N	<u>HEAT# YX1501783</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	N	<u>M304TRO.750W.049</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	N	<u>M36760</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 14</u> DATE: <u>17/02/09</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT0.750W.049 PO / BATCH NO: 35149/136760
 DATE: 17/02/09

MATERIAL CERT REC'D: yes THICKNESS ORDERED: .049
 QUANTITY RECEIVED: 48' THICKNESS RECEIVED: .047
 QUANTITY INSPECTED: 48' SHEET SIZE ORDERED: _____
 QUANTITY REJECTED: _____ SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>4130</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>.047</u>
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>MIL-T-6736 AMS 6371</u>
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>HEAT # 598618</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>M304NT0.750W.049</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>M136760</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 14</u> DATE: <u>17/02/09</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6 T1.000W.D65

PO / BATCH NO: 35749/136760

DATE: 17/02/09

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .065

QUANTITY RECEIVED: 24'

THICKNESS RECEIVED: .062

QUANTITY INSPECTED: 24'

SHEET SIZE ORDERED: _____

QUANTITY REJECTED: _____

SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/>	N	
CORROSION	Y	<input checked="" type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/>	N	
CORRECT MATERIAL	<input checked="" type="radio"/>	N	<u>6061T6</u>
CORRECT THICKNESS	<input checked="" type="radio"/>	N	<u>.062</u>
PHOTO REQUIRED	Y	<input checked="" type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/>	N	<u>ASTM B210</u>
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/>	N	<u>HEAT# F002189270002</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/>	N	<u>M6061T6 T1.000W.D65</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/>	N	<u>M36760</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 14 9-89</u> DATE: <u>17/02/09</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35149**

Purchase Order Date 1/31/2017

PO Print Date 1/31/2017

Page Number 1 of 3

Order From :

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED

JAN 31 2017

Contact Name

Vendor Phone 585 768 5600

Ship To Contact

Ship To Phone

Ship Via: YRC COLLECT

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M304TR0.500W.035	304 RD Tube .500 x .035W	2/6/2017 Yes 2/6/2017		60.00 f	\$1.50	\$90.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
Line Total:							\$90.00
2	M304TR0.750W.049	304 RD Tube .750 x .049W	2/6/2017 Yes 2/6/2017		100.00 f	\$2.10	\$210.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
Line Total:							\$210.00

8917-02-6

Note:

1/31/2017



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35149**

Purchase Order Date 1/31/2017

PO Print Date 1/31/2017

Page Number 2 of 3

Order From :

VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 585 768 5600

Ship To Contact

Ship To Phone

Ship Via: YRC COLLECT

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB FCA - (Free Carrier)

3	M4130NT0.750W.049	4130 RD Tube .750 x.049W	2/6/2017	40.00	\$6.00	\$240.00
			Yes	f		
			2/6/2017			

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

Line Total: **\$240.00**

4	M6061T6T1.000W065	6061T6 RD TUBE 1.00 x .065w	2/6/2017	20.00	\$2.96	\$59.20
			Yes	f		
			2/6/2017			

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

Line Total: **\$59.20**

Note:

1/31/2017



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35149**

Purchase Order Date 1/31/2017

PO Print Date 1/31/2017

Page Number 3 of 3

Order From :
TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

5	71401-45	PROCUREMENT QUALITY CLAUSES	2/6/2017	1.00	\$0.00	\$0.00
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Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

No
2/6/2017

5817-02-6

Line Total: \$0.00

PO Total: \$599.20

CL

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 1

Change Date: 1/31/2017